

REMARKS

Reconsideration of the application, as amended, is respectfully requested.

I. STATUS OF THE CLAIMS

Claims 1-13 are pending in this application. Claims 1, 4 and 12 have been amended to further clarify that the photosensitive organometallic complex includes one of Ag or Al. In addition, claims 5 and 10 have been amended to further clarify that the photosensitive organometallic complex includes one of an Ag transition compound including Ag and an ultraviolet sensitive organic ligand or an Al transition compound including Al and an ultraviolet sensitive organic ligand. Claim 8 has been amended to provide proper antecedent basis to this claim. Furthermore, new claims 14-22 have been added.

Support for the above amendments and new claims may be found throughout the specification as originally filed. No new matter has been added by virtue of this amendment.

II. 35 U.S.C. § 112, SECOND PARAGRAPH REJECTIONS

Claim 8 has been rejected under 35 U.S.C. 112, second paragraph on the grounds that the expression "the metal is Ag" recited in line 1 of this claim lacks antecedent basis.

In response, claim 8 has been amended to replace the expression "wherein the metal is Ag" with the expression "wherein the photosensitive organometallic complex includes Ag" to provide proper antecedent basis for this claim.

In view of the above action taken, it is believed that the above rejection to claim 8 has been overcome and thus removal of this rejection to this claim is thus respectfully requested.

III. 35 U.S.C. 102(e) REJECTIONS

Claim 1-3 have been rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,254,663 to Kelly et al. ("the Kelly patent").

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. (See MPEP 2133, **Verdegaal Bros. v. Union Oil Co. of California**, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

However, Kelly fails to teach or suggest all of the features recited in claim 1.

As mentioned above, claim 1 has been amended to further clarify that the photosensitive organometallic complex includes one of Ag or Al.

In particular, Kelly at the very least fails to teach or suggest a method of forming a metal pattern, wherein the photosensitive organometallic complex includes one of Ag or Al, as recited in claim 1.

As conceded by the Examiner in the instant Office Action, the Kelly reference fails to teach or suggest a method of forming a metal pattern utilizing a photosensitive organometallic complex which includes Ag. (See page 5, line 4 of the instant Office Action). Moreover, the Kelly reference is also completely silent regarding a method of forming a metal pattern, utilizing a photosensitive organometallic complex which includes Al. In contrast, the Kelly reference only discusses utilizing metals such as platinum and palladium as part of its surface activation compound coating. (See the Kelly patent)

Therefore, for at least the reasons set forth above, the Kelly reference fails to teach or suggest a method of forming a metal pattern, wherein a photosensitive organometallic complex includes one of Ag or Al, as recited in claim 1, and thus Kelly fails to anticipate this claim. Accordingly, withdrawal of the above rejection to claim 1 is respectfully requested. As claims 2

and 3 depend from and incorporate all of the limitations of claim 1, withdrawal of the rejection to these dependent claims is likewise requested.

IV. 35 U.S.C. 103(a) REJECTIONS

(i) Claims 4-7 and 9-13 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6, 919,931 to Chae ("the Chae patent") in combination with the Kelly patent.

(ii) Claim 8 has been rejected under 35 U.S.C. 103(a) as being unpatentable over the Chae patent in combination with the Kelly patent, and in further view of Japanese Publication No. JP 63-266870 to Tanaka Kiyoshi ("the Kiyoshi publication").

To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. (See MPEP 2143.03; *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)).

In response, it is respectfully submitted that the Kelly, Chae and Kiyoshi references alone or in combination fail to teach or suggest all of the features recited in claims 4, 5, 10 and 12 of the presently claimed invention.

As noted above, claims 4 and 12 have been amended to further clarify that the photosensitive organometallic complex includes one of Ag or Al. In addition, claims 5 and 10 have been amended to further clarify that the photosensitive organometallic complex includes one of an Ag transition compound including Ag and an ultraviolet sensitive organic ligand or an Al transition compound including Al and an ultraviolet sensitive organic ligand.

In particular, the Kelly, Chae and Kiyoshi references, alone or in combination each fail to teach or suggest a method of manufacturing a thin film transistor array panel (claim 4) or a thin film transistor array panel (claim 12), wherein a photosensitive organometallic complex

includes one of Ag or Al, as recited in claims 4 and 12, respectively. Moreover, also for the reasons set forth above, the Kelly, Chae and Kiyoshi references, alone or in combination each fail to teach or suggest a method of manufacturing a thin film transistor array panel (claim 5) or a thin film transistor array panel (claim 10), wherein the photosensitive organometallic complex includes one of an Ag transition compound including Ag and an ultraviolet sensitive organic ligand or an Al transition compound including Al and an ultraviolet sensitive organic ligand.

As mentioned above, the Examiner concedes in the instant Office Action, that the Kelly reference fails to teach or suggest a photosensistive organometallic complex which includes Ag. (See page 5, line 4 of the instant Office Action). In addition, the Kelly reference is completely silent regarding a photosensistive organometallic complex which includes Al. Furthermore, as conceded by the Examiner, there is no teaching or suggestion whatsoever in the Chae reference of forming an organometallic layer by coating a photosensitive organometallic complex. (See page 4, lines 6-7 of the instant Office Action)

Moreover, Applicants respectfully disagree with the Examiners contention in the instant Office Action, that it would have been obvious to one skilled in the art to substitute the Ag metal described in the Kiyoshi publication for the platinum and palladium metals described in the processes of Kelly. Rather, it is submitted that it would not have been obvious to make the above substitution for at least the following reasons that (a) the process materials used in Kelly and Kiyoshi are vastly distinct from one another and (b) also due to the unpredictability of the chemical art.

In particular, the processes described in Kelly and Kiyoshi utilize vastly distinct process materials from one another because Kelly describes using organometallic compounds for its surface active agents having an organic ligand with a platinum or palladium metal, whereas Kiyoshi describes using a liquid metal complex in which a silver halogenide, e.g., AgI or the like is suspended in the form of fine crystals singly or as a mixture coated on the surface of an interlayer insulating film IC (See **Kiyoshi publication**). A silver halogenide is clearly not an organometallic compound but rather is an inorganic metallic complex because a halogenide such as iodine is an inorganic ligand. Organic and inorganic compounds have very distinct properties and reactivity's from one another and are in two different fields of chemistry. In addition, it is a

well established fact in the field of U.S. patent law that the chemical art is an unpredictable art. (See *In re Marzocchi*, 439 F.2d 220, 223-24, 169 USPQ 367, 368-70 (CCPA 1971) and **2164.03 of the MPEP**). Thus, the substitution of one type of element or compound for another or even the slightest change in a chemical compound may alter the chemical properties and reactive properties of a chemical composition. Therefore, due to the unpredictability of chemical art and the significant difference between the organometallic compounds described in Kelly and the liquid inorganic metallic complexes described in Kiyoshi, it would not have been obvious to one skilled in the art to substitute the palladium or platinum metals of the organometallic compound of Kelly with the Ag metal of the liquid inorganic metallic complexes of Kiyoshi with a reasonable expectation of success. In other words, there is insufficient motivation, provided to one skilled in the art by either the Kelly or the Kiyoshi references due to the vast distinctions between their process materials (i.e. Kiyoshi deals with inorganic metallic complexes and Kelly deals organometallic compounds) to make the metal substitution proposed in the instant office action.

Furthermore, due to the complete silence of the Kelly, Chae and Kiyoshi with respect utilizing Al as part of an organometallic complex and the unpredictability of chemical art, it would also not have been obvious for one skilled in the art to substitute Al for the palladium or platinum metals of the organometallic compounds of Kelly with a reasonable expectation of success.

Therefore, for the reasons set forth above, the Kelly, Chae and Kiyoshi references, alone or in combination each fail to teach or suggest a method of manufacturing a thin film transistor array panel (claim 4) or a thin film transistor array panel (claim 12), wherein a photosensitive organometallic complex includes one of Ag or Al, as recited in claims 4 and 12, respectively. Moreover, also for the reasons set forth above, the Kelly, Chae and Kiyoshi references, alone or in combination each fail to teach or suggest a method of manufacturing a thin film transistor array panel (claim 5) or a thin film transistor array panel (claim 10), wherein the photosensitive organometallic complex includes one of an Ag transition compound including Ag and an ultraviolet sensitive organic ligand or an Al transition compound including Al and an ultraviolet sensitive organic ligand.

Thus, withdrawal of the rejection to claims 4, 5, 10 and 12 is respectfully requested. As claims 6-9 depend from and incorporate all of the limitations of claim 4, claims 6, 7 and 9 depend from an incorporate all of the limitations of claim 5 and claim 11 depends from and incorporates all of the limitations of claim 10, withdrawal of the rejection to these dependent claims is likewise requested. Moreover, new claims 14-22 are likewise patentable over the Kelly, Chae and/or Kiyoshi references for at least the reasons set forth above, because these claims depend from and incorporate all of the limitations of claim 1, 4, 5, 10 and 12, respectively.

V. CONCLUSION:

For the foregoing reasons, the present application is believed to be in condition for allowance. The Examiner's early and favorable action is respectfully requested.

The Examiner is invited to contact the undersigned if he has any questions or comments in this matter.

Respectfully submitted,



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